

ABSTRACT

In accordance with the present invention, compositions and methods are provided in which a layered low dielectric constant nanoporous material is produced that comprises a first layer juxtaposing a substrate; a second nanoporous layer juxtaposing the first layer; and an additional layer juxtaposing the second layer. The layered dielectrics of the present invention are formed using nanoporous materials by a) depositing a first layer on a substrate; b) depositing a second layer that is nanoporous and that juxtaposes the first layer; c) treating the second layered material to produce nanoporosity; and d) depositing at least one additional layer that partially juxtaposes the second layer. A layer of wires or other electronic components can also be situated between the substrate layer and the first layer.